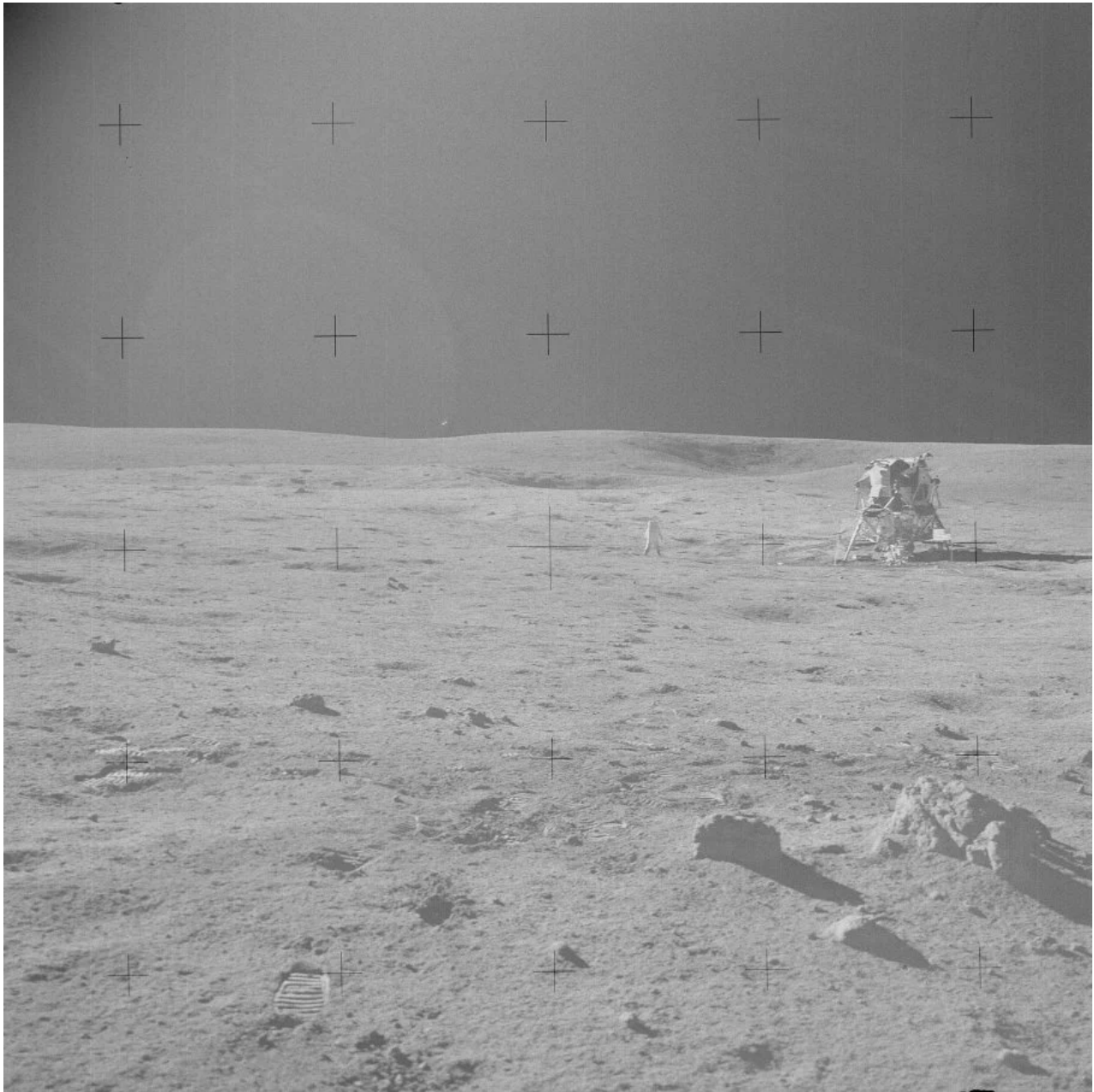


22. Как снималась знаменитая "лунорама"?

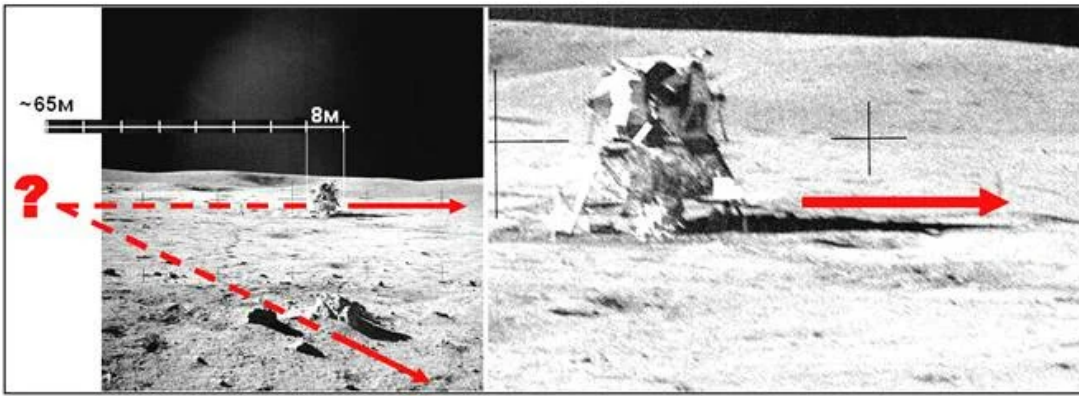
5-6 minutes

This shot from the Apollo 14 mission, called "lunorama" (moon panorama), has been the object of close scrutiny in many forums. As the saying goes, "many copies were broken" when discussing this photo.



Apollo 14, magazine 68 / MM. Snapshot AS14-68-9486.

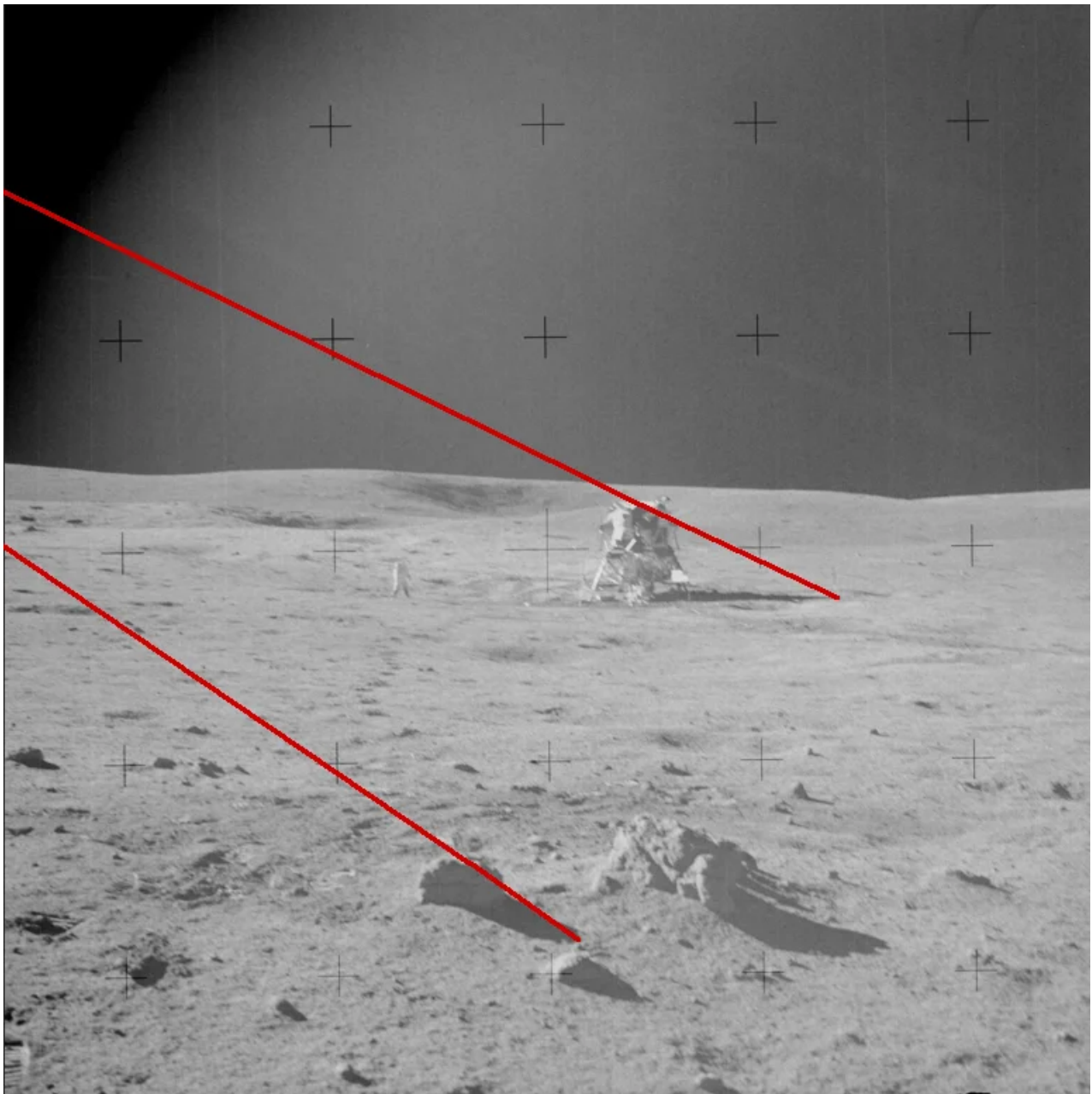
Some researchers have noticed that the shadows from the lunar module in the distance and the shadows from the stones in the foreground are not parallel. Knowing the width of the lunar module, which is about 8 meters, we can assume that the convergence point of the rays is located 65 meters from the lunar module. There, allegedly, is a light source, a searchlight that illuminates the area.



The convergence of the shadows suggests that the light source is 65 meters away.

And since the light source is so close, it clearly follows that the shooting was carried out in the pavilion, and not on the moon.

We also believe that this shot was filmed in the pavilion. But the distance to the light source is completely different.



Convergence of rays.

If we draw the convergence of the rays, as it should, connecting the top of the shadow with the top of the object, then the continuation of these lines will go far beyond the frame, and the lines will intersect after 200 meters, if we take it for the fact that the width of the lunar module is really 8 meters (looking ahead, I will say that this is not a fact).

The distance to the astronaut can also be calculated. Legend has it that this Apollo 14 photo was taken with a 60mm Biogon wide-angle lens. Knowing the focal length of the lens mounted on the Hasselblad 500 camera, you can calculate the distance to the astronaut.



The Hasselblad 500 camera with the Biogon lens from the Apollo 14 mission.

Since for the Biogon lens, the angle between the crosshairs in the picture is 10.3° ([according to NASA](#)), and the figure is 2° in height, it turns out that the astronaut is about 54 meters. And behind him in depth to the horizon stretches a space of at least another 100 meters. So what happens? Is it just a giant pavilion in front of us, exceeding three or even four football fields? The football field, according to FIFA recommendations, has a size of 68 x 105 meters, i.e. 7140 square meters, 4 football fields - 28.560 square meters.

How then can such a pavilion with an area of 30 thousand square meters be illuminated with a single searchlight from a distance of 200 meters?

Those who have seen how in the evenings a single football field is illuminated, they will understand that you do not need to be an expert in lighting to conclude that it is impossible to illuminate 4 football fields even with the most powerful device.



Lighting of the football field in the evening.

So how is this shot taken on the Apollo 14 mission? Which pavilion? The answer is actually simple. The pavilion was small. And the astronaut is not 54 meters, but only 7. Yes, yes, only 7 meters. And the width of the lunar module is not 8 meters or even 9.5 m (from the edge of the support bowl, as follows from Grumman's handbook), but only 1 meter.

The fact is that instead of a real astronaut, a stationary doll with a height of no more than 30 cm (approximately 25 cm) is installed in the frame, and next to it is a toy model of the lunar module, about 8 times smaller than the real one.

In real dimensions, these toys look something like the one shown by "Mythbusters" in episode 104. It is quite possible that this is the very props that remained from the filming of the lunar epic.



Mythbusters (Episode 104) shows a mock lunar module and an astronaut doll.

The photographs for the Apollo 14 lunarrama were filmed using a technology that had long been successfully worked out in Hollywood - with the help of models (miniatures).



Preparing a shot for the film "War of the Worlds" S. Spielberg.



Preparing a shot for the film "Voice of the Monster".

For example, here's an article for you, ["30 frames that will turn your perception of your favorite movie"](#) about the use of layouts in cinema.

The entire set for the Apollo 14 lunar frame is an area about 30 meters in diameter, about 1/8 of a football field in area, in general, like a basketball court. And such a site can be illuminated with one artificial light source without any problems. To create the feeling of parallel rays, there is no need to carry the lighting device 200-250 meters away and fix it somewhere under the ceiling. Since the models are about 8 times smaller than the original, it is enough to remove the device by 35-40 meters. Very comfortable conditions for filming!

And so that you don't guess that there are toy objects in the frame, two types of technical defects have been added to the frame. This is, firstly, deliberate illumination of the entire frame: so, instead of the absolute blackness of space, a light gray veil fills the entire upper part of the frame (see the topmost photo). And secondly, during photography, a special shaking of the camera was used to obtain poor image sharpness. More on this in the next article. ["Why are there so many defective frames in the moon panoramas?"](#) ...

Thanks for attention!

*

Cameraman L. Konovalov was with you



Until next time!